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## THE GRASSHOPPER PLAGUE:

A Study of the Pest and the Best Means of Fighting it.

BY OTTO LUGGER.

Entomologist Minnesota Experiment Station. Bulletin No. 43.



Among the worst pests known are insects of this kind, and it is not strange that grasshopper plagues are never forgotten by persons that have experienced them. The losses caused to farmers and gardeners, in fact to all classes of people, have been so enormous in the past that a repetition of such a plague is greatly to be dreaded. In the past the Colorado or "Hateful" Locust (*Melanoplus spretus*, Uhler) was the only species that invaded our State in such immense armies that the ground was covered with them, and that every green blade and leaf disappeared almost in a night.

As is well known, grasshoppers do not like to rest upon moist ground, but always crawl away from it by climbing upon higher plants, or fences and out-houses, if such are near. While in Duluth it rained, and consequently the grasshoppers tried to escape to more elevated positions than the wet soil. They did so by crawling upon the walls of houses, which were crowded with them. Strange to say, nearly all the grasshoppers found in the lower part of the city were members of the pellucid species, while the lesser migratory species could only be found near or upon the



Fig. 19.—*Sarcophaga cornuta* var. a, larva; b, pupa; c, fly, the hair lines showing average natural length. (After Riley.)

top of the hills. \* \* \* Wherever the soil was thoroughly dry and well drained, the lesser migratory species was found in largest numbers, but where the soil was moist or near water or swampy places the pellucid species was most numerous. In 1894 the locusts became very numerous and caused considerable damage in and near Duluth, by almost denuding the lawns and gardens near that city. They were in the beginning of the season most numerous in the more elevated places and upon the slopes of the hills, but as soon as the food became scarce in these localities the grasshoppers invaded the lower portions of the city and vicinity and destroyed almost every green thing in fields and gardens. As they reached their adult stage numerous swarms left the infested region in search of more suitable feeding-grounds, and became thus established in many places south and southeast of Duluth.



Fig. 20.—a, single egg of Pellucid Locust; b, egg-mass opened to show egg inside; c, egg; d, female; e, male. Lesser Migratory Locust: d, female; e, male; f, pupa natural size. Original.

### THE LESSER MIGRATORY LOCUST.

(*Melanoplus atlantis*, Riley.)

This locust, of which an illustration is given in Fig. 20, d, e and f, resembles very closely the Rocky Mountain species, Fig. 21, but is a little smaller. Of course there are other distinguishing characters not necessary to enlarge upon at this time. Like the former species it has wings much longer than the body,



Fig. 21.—Rocky Mountain Locust. Natural size. After Riley.

and is thus enabled to fly long distances. The longer wings, besides other characters, distinguish it from our common red-legged locust, which is illus-

trated in Fig. 22. The lesser migratory locust is essentially an eastern species, and is found in larger or smaller numbers from the northern part of Florida to the extreme north of eastern United States. Like the "Hateful" western



Fig. 22.—Common Red-legged Locust. Natural size. After Riley.

locust it is single brooded in Minnesota, but has the tendency to become double-brooded, a property in our favor, as all the young that are hatched during a warm Autumn are doomed to die. This species matures more rapidly than the pellucid and the Rocky Mountain species, hatching early in May and becoming winged early in July. This depends to a large extent upon the climatic conditions prevailing in that year. Eggs are deposited soon afterward, and oviposition continues for several months, though specimens of the adult insects become very scarce early in September, and those found show their old age by the frayed-out wings. The life-history of this insect is almost identical with that of the Western or Rocky Mountain species. It seems to be a geographical variety of the same, which has established a home in the Eastern mountains, where it always breeds, and on account of which it is frequently called the "White Mountain Locust." It is a very destructive species and the great losses to all kinds of crops sustained in different regions of New England from locusts are all owing to this insect.

As it has been found that the best method of combating this insect consists in plowing the ground after eggs have been laid, it is necessary to study these in detail.

### HOW THE EGGS ARE LAID.

The following figures will illustrate this point better than words. The holes for the reception of the eggs are made by means of two pairs of horny valves at the tip of the abdomen of the female (Fig. 23, b and c). These open and shut rapidly, and are well adapted to execute this function. The female pressing the tip of her abdomen forcibly against the soil, rapidly opens and shuts these hard and pointed valves, and soon pushes them into the ground, thus drilling a hole. Fig. 24 illustrates this action, and the various positions assumed by the female are plainly indicated. In a short time nearly the entire and greatly extended abdomen is inserted in a little curved and more or less oblique cavity. The legs are hoisted above the back during the operation of drilling this hole, which requires more or less time, depending entirely upon the condition and character of the soil. As soon as the hole is finished, it is filled with a frothy and mucous material. Professor Riley, in describing the method of laying eggs, writes: "By repeatedly extracting and studying specimens in every stage of oviposition, we have been able to ascer-



Fig. 24.—Rocky Mountain Locust, in the act of laying eggs. (After Riley.)

tain the exact method by which the egg-mass is formed. If we could manage to watch a female from the time the bottom of her hole is moistened by sebific fluid, we should see the valves all brought together, when an egg would pass down the oviduct along the ventral side, as guided by a little finger-like style, pass between the horny valves, and issue at their tips amid the mucous fluid al-

ready spoken of. Then follows a period of convulsions during which more mucous material is elaborated, until the whole end of the body is bathed in it, when another egg passes down and is placed in position. These alternate processes continue until the full complement of eggs are in place, the number ranging from 20 to 35, but averaging about 28. The mucous matter binds all the eggs in a mass, and when the last is laid, the mother devotes some time to filling up the somewhat narrower neck of the burrow with a compact and cellulose mass of the same material, which, though light and easily penetrated, is more or less impervious to water, and forms a very excellent protection. When fresh the mass is soft and moist, but it soon acquires a firm consistency.

"To the casual observer, the eggs of our locust appear to be thrust indiscriminately into the hole made for their reception. A more careful study of the egg-mass, or egg-pod, will show, however, that the female took great pains to arrange them, not only so as to economize as much space as possible consistent with the form of each egg, but so as to best facilitate the escape of the young locust; for if, from whatever cause, the upper eggs should fail to hatch, or should hatch later than the lower ones, the former would offer an impediment to the exit of the young in their endeavor to escape from these last, were there no provision against such a possibility. The eggs are, indeed, most carefully placed side by side in four rows, each row containing seven. They oblique a little crosswise of the cylinder (Fig. 25, a). The posterior or narrow end, which issues first from the oviduct, is thickened, and generally shows two pale rings around the darker tip (Fig. 25, b). This is pushed close against the bottom of the burrow, which, being cylindrical, does not permit the outer or two side rows to be pushed quite as far down as the two inner rows, and for the very same reason the upper or head ends of the outer rows are necessarily bent to the same extent over the inner rows, the eggs when laid being somewhat soft and plastic. There is consequently an irregular channel along the top of the mass (Fig. 25, c), which is filled only with the same frothy matter that surrounds each egg, which matter occupies all the other space in the burrow not occupied by the eggs. The whole plan is seen at once by a reference to the accompanying figure, which represents, enlarged, a side view of the mass

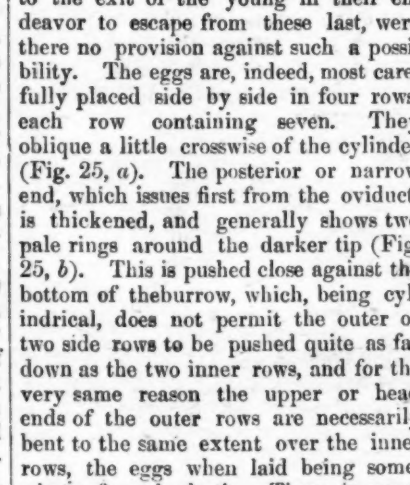


Fig. 25.—Egg-mass of Rocky Mountain Locust—

a, from the side, within burrow; b, from beneath; c, from above; enlarged. (After Riley.)

will endure is something remarkable. Yet if, by chance, the protecting pellicle is worked off before issuing from the ground, the animal loses all power of further forcing its way out. The instinctive tendency to push upwards is also remarkable. In glass tubes, in which I had the eggs hatching in order to watch the young, these last would always turn their heads and push toward the bottom whenever the tubes were turned mouth downwards; while in tin boxes, where the eggs were placed at different depths in the ground, the young never descended, even when they were unable to ascend on account of the compactness of the soil above."

The above minute account of the manner in which eggs are laid, and how the young are enabled to reach the surface, plainly indicates one good method by which the hatching of the eggs may either be prevented entirely or by which the young may be prevented from reaching the surface. By plowing the fields containing eggs of the Rocky Mountain locust, we perform two operations: We, first of all, remove the eggs from near the surface and cover them with five or six inches of soil; second, we invert the position of the hole containing the egg-mass, so that instead of its mouth pointing upwards, it now points downwards. At all events, the young insects are prevented from reaching the surface, if this becomes compact by rain and snow. Consequently if we plow during Autumn or soon after the eggs are laid we are safe, although if we plow in the Spring, with a normal amount of rain, we also effectually prevent their hatching and escape. Plowing has this additional advantage: The egg-masses in most cases are thoroughly broken up, the individual eggs become surrounded by earth and moisture, and being no longer protected by the water-proof coat of dried-mucous matter they soon rot and perish.

To repeat again: If we desire to get rid of the migratory species of locusts now infesting several Counties in the State it is absolutely necessary to plow every inch of the cultivated ground throughout the infested region in which eggs have been laid.

THE PELLUCID LOCUST.  
(*Camilla pellucida*, Scudder.)

This locust belongs to a different sub-family of grasshoppers than the lesser migratory locust; in fact, it is related to the North African and Asiatic species, so well described in holy scripture. It is much more robust than either of the other two migratory species. Fig. 27 shows this species with wings expanded, and Fig. 20, d and e, shows both the

The harder and less yielding walls of the burrow the easier will the young locust crowd its way out.

"Though the covering which envelops the little animal when first it issues from the egg is quite delicate, it nevertheless, in the struggles of birth, undoubtedly affords much protection, and it is an interesting fact that while, as we have seen, it is shed within a few minutes of the time when the animal reaches the free air, it is seldom shed, if, from one cause or another, there is a failure to escape from the soil, even though the young locust may be struggling for days to effect an escape.

"While yet enveloped in this pellicle the animal possesses great forcing and pushing power, and if the soil be not too compact, will frequently force a direct passage through the same to the surface, as indicated at the dotted lines (Fig. 25, c). But if the soil is at all compressed it can make little or no head-way, except through the appropriate channel (Fig. 25, d). While crowding its way out the antennae and four front legs are held in much the same position as within the egg, the hind legs being generally stretched. But the members bend in every conceivable way, and where several are endeavoring to work through any particular passage, the amount of squeezing and crowding they

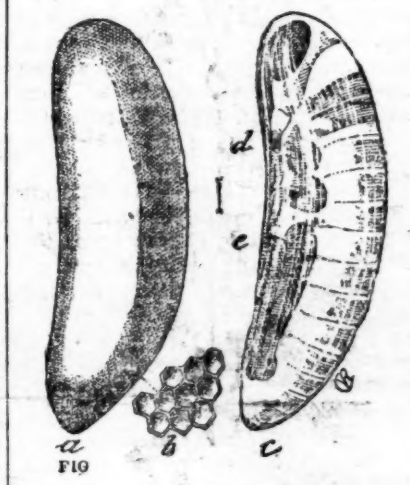


Fig. 26.—Egg of Rocky Mountain Locust—

a, showing sculpture of outer shell; b, the same very highly magnified; c, the embryo, just before hatching. (After Riley.)

will endure is something remarkable. Yet if, by chance, the protecting pellicle is worked off before issuing from the ground, the animal loses all power of further forcing its way out. The instinctive tendency to push upwards is also remarkable. In glass tubes, in which I had the eggs hatching in order to watch the young, these last would always turn their heads and push toward the bottom whenever the tubes were turned mouth downwards; while in tin boxes, where the eggs were placed at different depths in the ground, the young never descended, even when they were unable to ascend on account of the compactness of the soil above."

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## CORN IN THE DAKOTAS.

A Practical Talk on Raising and Marketing the Crop.

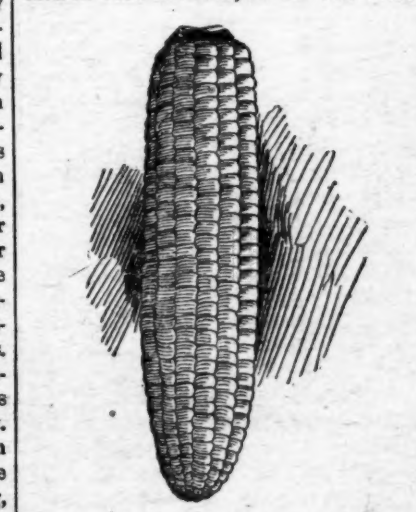
(Chas. McKissick, Mayville, N. D., before the North Dakota Farmers' Association.)

WING TO THE low price of wheat and other cereals, the attention of farmers in the Northwest is being more exclusively directed to the best methods to be employed in raising large crops of that king of the land, corn. Since we became assured that our climate furnished the necessary amount of sunshine and rain for its production, the number of producers of this staple crop has rapidly increased. This is true not alone of our own State and the Northwest, but is throughout the Southern States as well. More than 300 varieties of corn are known, and these varieties differ among themselves more than any other cereal. There is a great difference in size and shape of ears, and color of the grains, which may be white, red, yellow, purple, striped, etc. They differ also in chemical composition.

The varieties grown most abundantly in the United States are four great classes. The Flint varieties are most common east of Lake Erie and north of Maryland, and the Dent, west and south of these points. The Horse-tooth is grown extensively only in the South and West, along with the Dent. The sweet varieties are grown in all sections where corn is produced. Green corn was an important food with the native Indians, and common experience shows that it is very nutritious, retaining its value for food intact for several years, and being richer in albuminoids than any other cereal. The crop does not flourish well if the nights are too cool, no matter how favorable the other conditions.

Corn needs a deep, rich, warm, dry, and mellow soil; so the rich bottoms and the fertile prairies of the Mississippi basin and North Dakota are the regions of its greatest production. The region of chief production may be described as an area 1,000 miles long from east to west by 700 miles wide, with Springfield, the Capital of Illinois, as its center.

Corn as an article of food is one of the most extensively used grains in the world. It is moderately rich in nitrogen, and contains more oil and starch than other cereals, which makes it valuable for fattening purposes. The use of corn in the industries, in the raw mate-



FLINT CORN.

rial for the manufacture of starch, glucose, oil, and varied food products, is increasing every year with the increased facilities of production and the increasing application of chemistry to the arts.

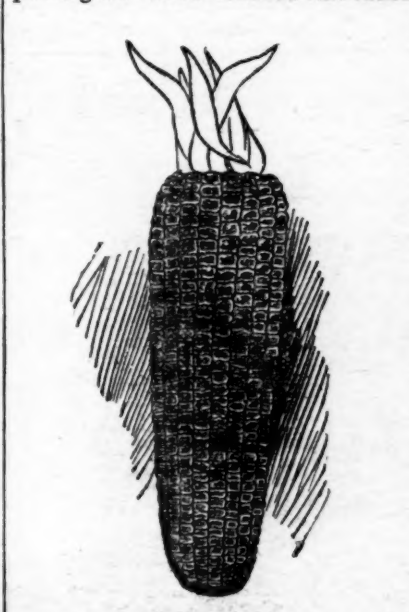
### METHODS OF PLANTING CORN.

There are several ways of planting corn; namely, the hoe, hand planter, and check rower and planter combined. For the rich, mellow soils of North Dakota, I much prefer the check rower and planter combined. The time of planting varies in different sections of the country. It requires more time for corn to mature in the Eastern and Middle States than it does in the Northwest. I consider the proper time for planting in North Dakota is from the 15th to the last of May, although corn has matured when planted from the 1st to the middle of June. For success in corn raising it is necessary to have the ground in fine condition, the best of seed, to plant in season; then, with the best of tillage, you have a right to expect a crop.

When corn commences to show it

self it should be harrowed with a slant-tooth harrow, so it will not injure the corn. This breaks the crust and destroys all young weeds that have started. As soon as the corn is a few inches high, start the cultivators, in order to keep the ground well stirred and clean. The drier the season, the more necessary it is to keep the cultivators going. Cultivation should continue until the tassels show themselves. The system of cultivation has changed somewhat in the last few years. At present shallow cultivation seems to be most in vogue. The first cultivating should be quite deep, and the larger the corn the shallower the cultivation.

Corn has more and larger roots than one would think. The roots are hollow; spreading over the ground and going down to a great depth, they form a perfect network; hence we must have shallow cultivation, for I do not believe in pruning corn roots. Shallow cultivation



DENT CORN.

leaves a mulch of loose soil to check the evaporation of water from below. This leaves the roots free to penetrate several feet deep for water, so that in the driest time they can get the required amount of moisture.

### THE COST OF RAISING AN ACRE OF CORN.

depends on so many conditions that I do not suppose any two of us will agree. The most important thing, to my mind, is a large crop, and the conditions are not always the most favorable for that. The time for harvesting is when the corn is fully glazed. The stalks, being full of juice, will mature the corn after it is cut and set up. The stalks grown on an acre are considered nearly as valuable for feed as the grain. In order to get the best results from stalks, the corn should be cut before the frost hits it.

Our mode of harvesting is quite satisfactory. We use the McCormick corn binder, made especially for harvesting corn. It will cut from eight to ten acres per day. We then set the shocks and leave until thoroughly dried and cured. Corn harvested in this way is as convenient to handle as any other grain. It can be hauled to the barn and ricked up, or husked in the field, or the ears can be snapped off, and you can invite in your neighbors and friends and have a husking bee.

Corn, like wheat, can be produced in North Dakota for less money than in most any other country, the soil being so fertile, and with improved machinery, such as planters, cultivators, binders, huskers and shredders.

### MARKETING THE CROP.

Now, having raised the crop, how are we to use it to the best advantage? To-day over all the great territory of the corn belt corn is cheap; all the way from 12 to 20 cents per bushel; price depending on market facilities, production, etc. At such low figures, the producers of this great and necessary staple are loth to part with it. To grow corn and sell it at that price, and make anything, will require close figuring. Now, instead of selling at present low prices, a great deal of corn should be marketed in the shape of beef, pork, mutton, and also in feeding our dairy stock. Over the great area of the corn belt there are a great many young cattle which corn will fit for the market. These fine young heaves will be in demand the coming season.

There is no likelihood of a great supply of hogs at market this Spring, if all reports concerning cholera are true. The market shows that hogs are wanted, and without doubt corn in the shape of hogs will be in demand from now on. So we see that some of this abundance of corn can be well turned into this channel. It seems to me there are one or two things of prime importance in this country—things upon which hang, to a considerable extent, our prosperity. These are our corn, our hogs, and our

dairies. These products have found their way into many a foreign market, and have brought us peace and plenty, and when they fail to hold their own against wind and weather, it means a sad loss for us.

A market for these products has long been established and is rapidly spreading abroad. A sample lot of fine butter was recently shipped from Oregon to China, obtaining better prices than could be realized at home. The trade is being pushed all over the Orient.

OUR DAIRY HAS A BRIGHT FUTURE before it, brighter perhaps than any other industry. Our natural advantages lie in cheap feed, and this we have with absolute certainty. I have given rather full investigation to the matter of putting corn into shock and feeding direct to cattle, hogs, and dairy stock, and we are now at liberty to consider how we can make beef and pork and carry on our dairies to the best advantage; and just here a little personal experience will not be amiss.

Last Fall I purchased for the Mayville Farm 65 head of two and three-year-old steers, and three pairs of oxen, which I am feeding for Eastern markets. We had a large quantity of corn on hand, which I am feeding the cattle. The oxen we feed a mixed ration, consisting of sugar beets, corn, and ground barley. For three or four weeks they made a gain of seven or eight pounds per day each. We also fattened and shipped three car loads of hogs. We also have 65 head of stock, light two-year olds, to help consume the course feed.

I am dairying on my farm at Camellon in a small way. We make 100 pounds of butter per week, separator process, which sells readily at 25 cents per pound. The cows are grade Jerseys. The first of the season the feed consisted of sugar beets, ground barley and bran equal parts, corn fodder, and Hungarian hay. Having used up the beets I substituted potatoes.

I have endeavored to set forth the value and importance of the corn crop to the farmers of North Dakota, and a few of the ways in which this staple product can be utilized.

In conclusion, let me reiterate. The important products of this country which are being developed by the noble sons of toil are these: Our American beef, our hogs, our dairies, and our American corn; for everyone knows how materially they add to our prosperity, and what fame they have attained wherever man has his dominion, and wherever it has been at all practical or possible to introduce them.

### Artichokes.

EDITOR AMERICAN FARMER: Artichokes are pronounced the best and surest root crop for dry seasons. This root will be appreciated by those living in drought sections, and farmers who live on poor, thin soil, while on rich soil it has no superior.

Should another dry season overtake us, we may be ready to meet it. The yield is so enormous that one can scarcely believe the quantity that can grow on an acre.

Those who have given them a thorough trial the past year report a yield of from 900 to over 1,500 bushels to the acre.

Hon. W. Hutson, in Rice County, planted in his garden five ounces of very small artichoke roots and harvested, last Fall, 20 pounds and seven ounces; this equals nearly 2,000 bushels to an acre.

The greatest hog food known is artichoke roots. It is, without question, the greatest root hog fattener ever discovered.

It will surely pay well to have a piece of land planted with this rich, juicy and nutritious food for hogs, milk cows and other cattle. It has been demonstrated that they are the best food for cattle known, and hence are now attracting much attention. They are also highly recommended for milk cows, increasing the yield of milk and at the same time improving their condition. They are well adapted to any soil upon which corn or potatoes can be grown.

The tops, which are produced in immense quantities, when properly cured make excellent food for horses and cattle. The feed is not only good for cattle, but they are very highly relished by man as well, and make a savory dish in a variety of ways—fried, roasted, baked. If you can use this article, you may do so.—L. J. PATE, Brown's Valley, Minn.

### Good Advice.

An experienced farmer advises: Feed all you raise; keep only the best grades; take the crop to market in the shape of live stock; keep on with your farming, whether the prices are low or high; grind your feed together and cook on soak before feeding; always keep a keen lookout to make both ends meet.





## Pen Notes.

The Indiana Live-Stock Sanitary Commission has issued an order to the railway companies requiring them to disinfect all stock cars coming into the State to guard against hog cholera.

In a good many instances where skinned hogs have been fed to swine together with some grain at average prices the man feeding it has been able to get back 25 cents per 100 pounds for the skinned hogs.

The South is showing a deep interest in fine hogs. The highest priced boar sold at auction, King Medium, went to Oliver Lippencott, Jr., Waco, Tex., and the highest priced sow, Council's Beauty, sired by Harold, by Hadley, by One Price, bought by W. C. Ellis, Terry, Miss.

At farrowing time the sow must be well looked after. See that she has a warm, dry place, with plenty of good straw to make her nest. Straw taken from a manger after being picked over by the horses is good, for the little pigs often get tangled up in long straw.

Great care should be taken not to feed the young pigs sour milk or sour food from the swill barrel. It will derange their digestion. They will not be nourished sufficiently by it, and it is almost certain to produce disease, which will work much harm, and, it may be, will cause the death of the pigs.

## Feed for Young Pigs.

Young pigs will begin to feed from hand when two weeks old, or less if they are well managed. A good way is to tame them by giving a little cow's milk warmed in a shallow dish, in a part of the pen separated from the sow by a partition under which the pigs are able to creep. As the milk is eaten, add to it a little crushed oats and wheat, half and half, making the mixture thin. Give only a small quantity, as much as will be eaten clean, and the dish licked over. Feed the sow all she will eat of ground corn, buckwheat, and wheat bran, in equal quantities, mixed with skimmed milk, which is most desirable for a nursing sow. When the small pigs are weaned, continue this feeding until the meadow is ready where they will be pastured. A clover lot should be provided for them, and for a change another lot sown with oats and peas; the two may be used alternately. At the same time, the milk and grain feeding should be continued. It is indispensable that a sufficient water supply should be provided in the pasture, clean and kept clean, in a running trough into which the pigs cannot get to bathe. For this purpose a shallow flat bathing trough should be provided to take the overflow from the drinking trough.

## Thumps in Pigs.

One of the most effective ways of saving the affected usually where the litters

## GRASSHOPPER PLAGUE.

(Continued from first page.)

male and female insects, as well as the egg and egg-masses, *a*, *b* and *c*. The pellicid locust has a rather wide distribution, occurring in California, Utah, Wyoming, Colorado and other Western States. It occurred in immense swarms in California during the years 1877, 1878 and 1879, leaving devastation in its wake. The flight of these pellicid locusts is quite different from that of the two other migratory species, as they do not rise to a very high elevation, nor do they fly so continuously. By a careful comparison of the illustrations it will be seen that this species is quite different from the others illustrated, nor does it resemble any of our native species.

The females of the pellicid locusts commence to deposit their eggs about the end of July, usually at least 14 days later than the other migratory locusts. Their method of doing so is entirely different. As a general rule they select for this purpose pasture land, road sides, or, by preference, clearings from which the stumps have not yet been removed, although the land has already been used for crops. In such places large numbers of eggs are deposited in the soil. Usually they are placed right upon the surface of the soil, where they are protected by the grass and by the rubbish found in such situations. Occasionally the eggs are deposited just beneath the surface, but only when the ground is sufficiently loose to enable the insects to do so. The eggs are about 4 mm. in length and 1 mm. in diameter; they are slightly curved and rounded at the ends (Fig. 20, *a*). They are deposited in layers, each with three or four eggs, which overlap and appear somewhat irregular, as is shown in Fig. 20, *b*. These diagonally overlapping layers are built up until an elongated cylindrical mass from 10 to 15 mm. in length is formed. This whole mass of eggs is protected by a waterproof covering composed of bits of earth cemented together with the frothy material produced by the mother insect at the time the eggs are deposited and arranged by her. One end of this protective layer of waterproof material is very thin, almost or entirely open, thus affording the young and weak locust an easy means of egress. Each cylindrical capsule contains about 20 eggs.

In many places in which the grasshoppers have been very numerous, in a square inch of soil were found as many as six egg masses, which means 17,000 eggs to the square foot, enough to make crops in their vicinity a very problematical affair for 1896.

As has been stated before, THE ONLY METHOD to reduce and destroy these injurious insects that promises success is the plowing of all the land in which eggs have been deposited. And in this case, as in so many others, where measures are directed against destructive insects, concerted action is all-important. If one farmer does this work in a careful manner, and his neighbor refuses, perhaps, to plow up a piece of meadow land filled with eggs, all the work of the farmer will be more or less performed in vain, as the careless farmer can breed upon his land



Fig. 21.—The Pellicid Locust. After Riley.

## The Smallest Oxen in the World.

One of the greatest curiosities among the domesticated animals of Ceylon is a breed of cattle known to the zoologist as the "sacred running oxen." They are the dwarfs of the whole ox family, the largest specimens of the species never exceeding 30 inches in height. One sent to the Marquis of Canterbury in the year 1891, which is still living and is believed to be somewhere near 10 years of age, is only 22 inches high and weighs but 100½ pounds. In Ceylon they are used for quick trips across country with express matter and other light loads, and it is said that four of them can pull the driver of a two-wheeled cart and a 200-pound load of miscellaneous matter 60 or 70 miles a day. They keep up a constant swinging trot or run, and have been known to travel 100 miles in a day and night without either food or water. No one knows anything concerning the origin of this peculiar breed of miniature cattle. They have been known on the Island of Ceylon and other Buddhist countries for more than 1,000 years.

## Young Calves.

As soon as the calf is dropped it should be put into a large room with low partitions, in the full rays of the sun all through the day, and not in a dark, close pen, away from the sun and good air, and never cleaned out from fall to Spring. Now you have got the pen, be sure and keep it well littered with straw. The pen, or pens, should open into a yard, so they could run out and in when the weather is suitable, with free access to water; and, above everything else, give them a boundless amount of pure air.

As soon as the calf is born we assist it to draw what milk it will, and then milk the cow clean for two or three days; then teach it to drink the milk warm from the cow for two weeks, then begin to feed skim milk with a handful of wheat bran, and increase the quantity of bran as it grows older, and then add about one-half ground oats. Give this until about seven months old. One thing I wish to speak of is this, which is very much better, and saves much time: Heat the water and temper the milk with the hot water. By so doing it is sure to get an even heat every time, and it is healthy for the calf to have more bulk.

—H. G. ARBOTT.

## A Flock of Rabid Sheep.

A curious sight was witnessed at Moravia, Pa. It was no less than a flock of mad sheep. The sheep were the property of James Kelso, a wealthy farmer. They at first appeared to be restless, and afterward took a great dislike to water. They soon showed unmistakable signs of hydrophobia, and snapped at each other and made a queer noise that somewhat resembled the growling of a dog. One of them chased a woman who was passing in the road, and compelled her to climb a fence for safety. Eleven of them appeared to be in such a condition that it was deemed advisable to kill the entire lot, and this was done. It was found that each one of the sheep had been bitten.

## Cleanse

Your blood now by taking Hood's Sarsaparilla the best Spring medicine. It thoroughly expels all taints of Scrofula, Salt Rheum and Humors, and vitalizes and enriches the blood.

**Hood's Sarsaparilla**  
Is the One True Blood Purifier. All druggists.

Send for free literature. Hood's Pills cure Liver Ills; easy to take, easy to operate. 25c.

## CONSUMPTION.

TO THE EDITOR:—I have an absolute remedy for Consumption. By its timely use thousands of hopeless cases have been already permanently cured. So proof-positive and I of its power that I consider it my duty to send two bottles free to those of your readers who have Consumption, Throat, Bronchitis or Lung trouble, if they will write me their express and postoffice address. Sincerely,  
T. A. SLOCUM, M. C., 183 Penn. St., New York

Taylor's Falls, Rush City and Duluth, which required, in all, 95 barrels of kerosene oil. Besides this, smaller amounts of kerosene oil were bought in the beginning of the work wherever it could be obtained, in all about 10 barrels.

The "hopperdozers" were made as follows: A sheet of ordinary sheet iron, such as is used for making stove-pipes, was turned up one and one-half inches around the edges and riveted at the corners. This made a shallow pan about eight feet long, two feet broad and one and one-half inches deep. To the bottom of this were riveted the six small strips which could be fastened to the three runners on which the pan rested. To the rear side of the pan was screwed a light wooden frame, as long as the pan and one and one-half feet high. Over this frame a piece of canvas was stretched. This frame served the important office of throwing back all those grasshoppers that otherwise would jump clean over the pan, and throw them into the oil.

The runners on which the pan stood were usually made from saplings or small pieces of board having an upward curve in front to prevent them from catching in the ground. The front ends of the runners were all fastened by screws to a crosspiece which was, in turn, drawn by two ropes, one at each end. These ropes were joined in front and fastened to a single-tree (Fig. 29). Sometimes two "hopperdozers" were fastened to a long pole by means of short ropes: this was very easily drawn by one horse. Just in front of the pan was fastened a piece of rope which swept the ground a few inches in advance, and served to stir up the hoppers and make them jump into the pans. In the pan was laid a piece of cloth, which was first thoroughly saturated with water. About a pint of kerosene was then thrown in and the upright sheet or sail of canvas moistened with oil. The machine was then drawn over the pasture or wherever the hoppers were thickest. In a short time it was usually seen to be partially filled with dead and dying insects.



Fig. 31.—Large Hopperdozer, with partitions. After Riley.

The slightest touch of kerosene, either from the pan or from the canvas sheet, means death to the hopper, for the oil spreads over its body in the same way that a single drop will spread over a large surface of water. It seems to produce a paralysis, which is first shown by the stiffening of the legs. A very large proportion of the hoppers that came in contact with the oil in the pan immediately jumped out again, but they invariably died in the course of a few seconds or minutes. Fig. 30, Plate 4, shows a hopperdozer in operation in a hay-field. A narrow strip was cut around the margin of the field and the hopperdozer drawn around in this strip, with great success. Fig. 29 shows two fastened together and drawn side by side, in detail so as to enable anybody, even with but little ingenuity, to make them. The nature of the ground in the infested

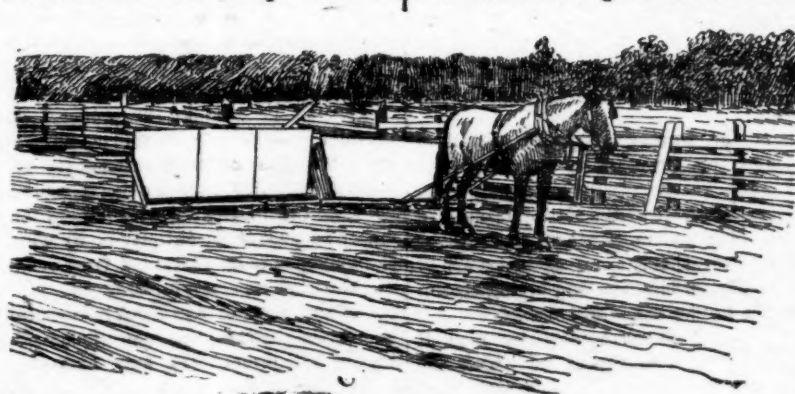


Fig. 30.

region did not, in many places, admit of using more than one hopperdozer at a time. The farmers in the infested regions watched with great interest the operations with the few hopperdozers first made and used upon the farm of Mr. Stannard. Many farmers from far and near were present and when they saw the possibilities of these simple machines they were not slow to realize that by faithful work they could largely protect their very promising crops. Generally speaking the farmers showed a very commendable spirit to fight their enemy, and they went to work with a will. Yet notwithstanding all this the grasshoppers would have done a vast amount of damage if the climatic conditions had not been very favorable to the farmer. At the time when grasshoppers are most voracious, and when they usually move about in large armies from field to field, a great number of light rains fell at frequent intervals, assisting the plants most wonderfully in their growth, while greatly dampening the ardor of such warm-loving insects as the grasshoppers, which, as mentioned before, are

not fond of moisture. These rains helped the growth of the plants and retarded that of the grasshoppers. Later when these very seasonable rains ceased to fall, the plants of rye, oats, and wheat stood so close and were so rank that the ground was most thoroughly shaded, and being shaded retained the moisture for a long time. This condition of the grain-fields was not at all to the liking of the grasshoppers. They wandered about the edges of such fields, but did not enter, except in cases where the ground was very poor or the stand of grain irregular; here they caused some damage, chiefly to the oats. As a general rule, however, the grain escaped unharmed, and only pastures, meadows, and some old timothy fields suffered greatly. This state of affairs assisted farmers greatly in fighting the enemy, as they did not need to use the machine in the grain-fields themselves but only along the borders.

Immense numbers of grasshoppers were killed before they caused much damage, and the State at large ought to be thankful to these farmers, since without their labors the locusts might have spread over the larger part of the State, instead of being confined to a small portion of it. How many grasshoppers are killed by a hopperdozer is difficult to say, as nine out of 10 that jump into it jump out again, only to die soon after in the field. But if only five or six bushels of the still-small grasshoppers are scraped off the "dozer" during a day's labor, this would mean 50 or 60 bushels killed by a single machine. This is by no means an exaggerated estimate, but if only 10 per cent. of this amount were killed, it would well pay for the work. Kerosene oil has this additional advantage, that it leaves a strong odor behind, which is very apt to spoil the appetite of the grasshoppers, which escape destruction, and which will drive them away to less highly-scented pastures. As this oil kills plants as well, proper care in handling the hopperdozers should be observed, otherwise much injury can be caused by careless work.

Hopperdozers, though very good machines upon level ground, free from trees and stumps, can not be used in all places. Some farmers living upon a newly opened farm, upon which many stumps were standing, managed their machines in a very peculiar and ingenious manner. Instead of moving the hopperdozer they drove the hoppers themselves into the pan, which in this case was used in the same way as a corral is used to capture cattle or horses. Though much slower, these intelligent farmers still succeeded in killing the greater number of their enemies and saved their crops.

In places where the hopperdozer cannot be used on account of the rough, uneven or too sloping condition of the ground, and where cattle and chickens can be kept away, there is no better way of destroying large numbers of the locusts than by the use of poisoned baits made of bran-mash. This is made by thoroughly mixing Paris green or London purple with dry rye or wheat bran; about one and one-half or two pounds of the poison to 25 pounds of bran is a good proportion; to this added enough water to form a mash thick enough to be formed into balls without falling apart when laid upon the ground. Frequently cheap molasses is added to keep the mash from becoming too dry.

But, after all, no matter how useful hopperdozers may be against grasshoppers and other insects, they are only a makeshift to be employed when other remedies cannot be employed. In many places they cannot be used at all; for instance, not upon the hillsides of Duluth, upon which immense numbers of grasshoppers have found a home. Here other machines might be used, which capture the grasshoppers in bags, and in which the insects are ground up by rollers. Poison could also be applied where cattle and chickens can be kept away. The true remedy consists in plowing, as has been described before, and wherever grasshoppers are numerous this method has to be resorted to. Of course, it would be best to plow the soil containing eggs during the Autumn, as by doing so the surface of the plowed ground becomes thoroughly compacted by rain and snow. Plowing in Spring, if well done and as early as possible, will also be successful, though in some cases a few grasshoppers may succeed in reaching the surface.

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# THE APIARY.



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George A. Fleming, of Visalia, Cal., profiting by a paper recently written by W. H. Hammond, forecast official of the United States Weather Bureau, made an experiment during the recent cold

map and succeeded in protecting the fruit growing on his 400-acre farm from any damage by frost. His neighbors' crops, which were unprotected, suffered quite seriously.

Hammon's <sup>method</sup> was somewhat of an improvement over the one recommended by Finke, of San Bernardino. The latter advised the use of large vats of water with fires built around them to produce condensation. Hammon sug-

gested the use of small fires, sprayed from time to time. The large fires recommended by Finkel, he thought, would produce an updraft carrying the moisture too high to do any good. In turn, Fleming has improved on Hammon's idea. His method is described in a letter written to Hammon:

"In endeavoring to carry out your idea of evaporating as much water as possible with the least amount of rising heat we used several plans. We could not spray water on our fires, as, in order to make evaporation continuous, it required a man to attend each fire. We burned brush between our rows and open spaces, and the beds of live coals formed were sandwiced with wet

straw and manure several hours before sunrise and kept wet. This could not be done among the trees without danger of burning them. We therefore heaped wet straw on a wire network four feet square, stretched from four stakes driven into the ground, the straw being about one and one-half feet from the ground. Small fires were built under them, and a man could attend to several, occasionally

"But we finally hit on a still better scheme. We built similar wire frames on our low truck wagons, stretching them from four wagon stakes and heaping wet manure over them. Dirt was thrown on the wagon beds to protect them, and pots of burning tar were set underneath the straw roof. A barrel of

water on the wagon was used to keep the straw wet. These wagons were driven about and did the best work, as they could go wherever most needed. The smoke and vapor were carried to the rear as the wagon moved, and being at once out of the rising heat, fell close to the ground in a long white trail. A daylight our whole 400 acres of orchard was covered with a white fog extending from the ground about 20 feet high.

"It looks now as if one could absolutely protect against any ordinary frost and if so, you will have earned our everlasting gratitude." <sup>21</sup>

**Flower Seeds Free to Everybody.**  
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**Italianizing Bees.**  
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Oh, to be in England, now that April's there,  
And whoever waxes in England soon, some  
morning, unware,  
That the lowest loughs and the brushwood  
about  
Round the elm-tree hole are in tiny leaf.  
While the chaffinch sings on the orchard bough  
In England now!  
And after April, when May follows,  
And the white-throated birds and the willow  
Hark, where my blossom'd pear tree, in the  
bush,  
Loans to the field and scatters on the clover  
Blossoms and dew drops—at the bent spray's  
edge—  
That's the wise thrush; he sings each song  
twice over,  
Left you think he never could recapture  
That first fine, careless rapture!  
And though the fields look rough with hoary  
dew  
They will be gay when noontide wakes anew  
The buttercup, the little children's dower,  
Far brighter than this gaudy melon-flower.  
— Browning.

**The Lawyer's Invocation to Spring.**  
Whereas on certain boughs and sprays  
Now divers birds are heard to sing,  
And sundry flowers their heads upraise,  
Hail to the coming-on of Spring!

The songs of these birds are  
The memory of our youthful hours,  
As green as these birds and blossoms,  
As fresh and sweet as these birds and blossoms.  
The birds are—happy pairs—  
Love, 'mid the forest's bowers, enshrine  
In forested nests; themselves their heirs,  
Administrators and assigners.

Oh, how sweet of Cupid's court,  
Where tender pleasures actions bring,  
Season of frolic and of sport,  
Hail, as aforesaid, coming Spring.  
— H. P. H. Brownell.

#### ABOUT WOMEN.

**MRS. THRASHER, OF COVING-**  
ton, Ky., finds a cat farm quite  
profitable. She can sell her best An-  
gors for \$50 a pair.

**MRS. H. W. R. STORY IS KNOWN**  
as the "Woman fruit-grower of  
southern California." She has one of  
the largest walnut groves in the world.

**THE NEWSPAPERS CHRONICLE**  
occasional burglaries committed by  
women, and it seems as though none of  
the occupations of life are closed to the  
gentler sex in these days.

**A WOMAN WHO IS AN EN-**  
thusiastic naturalist suggests that  
the diminution in the number of song  
birds of New England is due not to the  
hostility of the English sparrow, nor to  
the small boy, nor to the fashion of  
wearing birds in bonnets, but to the gen-  
eral use by farmers of Paris green and  
other poisons as insect exterminators.

**MRS. LUCY RIDER MEYER, OF**  
the Chicago Training Schools for  
Missions, has prepared what is called  
"The Shorter Bible." This consists of  
a simplified version; obscure parts are  
omitted; narratives of different parts  
relating to the same thing are combined;  
the poetry is printed in poetic form; the  
history of the Jews after the division into  
the kingdom of Israel and the kingdom  
of Judah is arranged to show the con-  
temporaneous history of the tribes. These  
are some of the features of the simplifica-  
tion.

#### All Sorts.

March's jewel is the Jasper, April's  
the sapphire. The sapphire is also  
attributed to September, according to  
some devices.

Dainty tea cloths may be fashioned  
from large dinner napkins edged with  
linen lace. Sometimes insertion is set  
in above the hem, which makes them  
very handsome.

The widow's cap is as old as the days  
of Julius Cesar. An edict of Tiberius  
commanded all widows to wear the cap  
under penalty of a heavy fine and  
imprisonment.

Five or ten minutes spent every morn-  
ing during Winter in rubbing the  
body briskly with a flesh brush, or piece  
of flannel over the hand, will do much  
to keep the skin active and prevent  
cold.

Too many women are oblivious of  
that excellent rule for the selection of  
costumes or trimmings that "in the day-  
time you must match the color of your  
hair, and at night the color of your  
eyes."

The wonderful new X-rays are said  
to be valuable in discovering false  
true jewels. When the X-ray becomes  
a matter of course—if all that is said  
of it be true—or if only half be true—  
life will have quite a different aspect.

Ribbon is again being used for brace-  
lets, following the fashion of long ago.  
The prettiest ribbon bracelet is of heavy  
white satin ribbon about an inch wide,  
fastened with a diamond clasp. One  
cannot wear the satin ribbon in white  
becoming, however, unless one's hands  
are very white and of faultless shape.

Bicycles and poster collections con-  
tinue to be the reigning fads among the  
women. The posters are really great  
fun, but they are hard to get. The news  
agents sell them for five or ten cents  
apiece, but they are besieged by pur-  
chasers. The posters are not exactly  
the most suitable of decorations for a  
dainty bedroom or boudoir, but they are  
the very jolliest for a studio or den or  
work room of any kind where there is  
a flavor of Bohemianism.

The English sometimes use a very  
little word for a very big thing. A  
large restaurant where elaborate dinners  
and luncheon are served is called a "Tea  
shop," or a "Run shop." Which is quite  
different from the British. We might pre-  
ferably heed this example, for it is quite  
the thing here to call a tiny needle and

thread shop an "Emporium," or a  
narrow little box of a room "The Palace  
Barber shop," or a stuffy small luncheon  
room "The Westminster" or the "Elite"  
or "Castle," or some other extravagant  
title. It does not really seem as though  
the British were more modest than we  
—perhaps this is an exception.

Thomas Wentworth Higginson once  
gave as a list of 10 good books to put  
into the hands of little girls—"Little  
Women," Miss Jane Andrews; "The  
Seven Little Sisters who live on the  
Round Ball that Floats in the Air";  
Hawthorne's Wonder Book; Long-  
fellow's Evangeline; Lowell's Vision of  
Sir Launfal; Whittier's Snow Bound;  
Irving's Sketch Book; Cooper's Last of  
the Mohicans; Uncle Tom's Cabin, and  
Hale's "Ten Times One is Ten." "The  
story of the Seven Little Sisters" will  
tell them a great deal about the planet  
that they live upon, and Uncle Tom's  
Cabin and the Last of the Mohicans  
will bring before them the story of the  
two other races that live in their country.

#### FASHION'S FANCIES.

The new shirt waists—for shirt waists  
are to be more numerous than ever—are  
bewildering in variety. The one pic-  
tured is made of lawn, figured in a fine  
blue and white, close, Persian-like pat-  
tern. It is made with collar, cuffs, and  
the band down the front, of white lawn,  
decorated with a narrow band of insur-  
tion. This is one of the newest of the  
styles, and is pretty and trig looking.

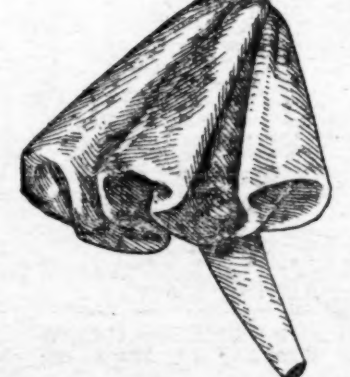


The old favorites made with straight  
cuffs, buttoned in two places, with a high,  
turn-over collar, full fronts and a point-  
ed yoke in the back, are as neat and  
stylish as ever, and are fashioned in ging-  
hams, grass linens, percales, and heavy  
lawns.

Dimity shirt waists made with a ruffled  
front and with a ribbon tied around the  
throat for a collar with ribbons at the  
wrists for cuffs and a ribbon belt, will be  
made for dainty girls who like fluffiness.  
Silk shirt waists are not so popular as  
cotton ones. Grass linen, embroidered  
in pink roses, striped with green bands,  
or in cut work or plain, is the best liked  
of all materials for shirt waists or for  
whole dresses, though, of course, one  
must have the other materials for variety.

Sleeves are full, and made after a  
Bishop sleeve pattern.

A pet sleeve nowadays is pictured in  
the cut. It is laid in pleats at the arm-  
hole, and droops over the elbow. It can  
be made elbow length for Summer frocks



and finished with frills of lace. It is a  
particularly pretty style for Summer silks  
and challoes. It needs to be stiffened  
to make it set prettily.

Skirts are not quite so wide nor are  
sleeves quite so big as they were last  
Spring, which is something to be thank-  
ful for, even as tight sleeves and narrow  
skirts are to be dreaded. Rather large  
sleeves and rather narrow skirts are the  
most becoming and, therefore, the most  
desirable.

Grass linens are quite the most stylish  
of all Summer materials, and tan color—  
their color—seems to be the most popular.  
Tan-colored gloves and tan-colored para-  
sols are sold to match the linen, the  
gloves, in exquisite shades, and the para-  
sols, with ribbons and ruffles and em-  
broidery insertions galore, though the  
plain parasol, with a slender natural-  
wood handle, is as much liked as the  
more elaborate ones.

The grass linen itself is no longer the  
prim, demure material of last year. It is  
now crinkled and striped, dotted, em-  
broided and frilled, and, though it is  
still inclined to be demure, there is a hint  
of gaiety about it. Green is one of the  
prettiest of all colors to put with the soft  
tan color, but pink is very pretty. A  
grass-linen skirt, made very plainly, fit-  
ting closely over the hips and flaring at  
the hem, with a waist of green-striped  
grass cloth, with sleeves of the plain, and  
a belt, collar, cuffs and rosetts of green  
satin, would be as handsome a Summer  
frock as one could wish, and one that  
might go to church on a Sunday in the  
most fashionable of congregations  
without a particle of fear.

A neat costume to be made of serge,  
tweed, cheviot, or any of the heavy ma-  
terials, is pictured. The waist has lapels  
of the same material as the frock, but  
the vest, collar, and belt are of broad-  
cloth. A stylish frock made after this  
fashion is of tan-colored tweed, made  
with a plain well-fitting and well-hanging  
skirt, with the waistcoat, collar and belt  
of a lighter shade of broadcloth, and  
with two small brown buttons on the  
belt and two on each cuff. The dress  
when made for slender women must not  
be fitted with darts, but the fullness for  
them should be drawn down in small  
gatherings under the belt. The lapels

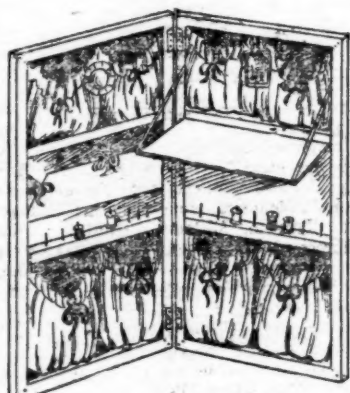


coming down over it give a graceful  
effect. In the same way a few gathers  
at the belt in the back make a prettier  
effect than to have a close fitting waist  
under a round belt. A dress with a  
round waist under the belt should never  
be made with all the darts and seams of  
a basque. It must fit and set just right,  
and the gathers are put in very carefully,  
and there is no blouse effect whatever  
about it.

#### THE SEWING SCREEN.

A Useful and Decorative Addition to  
Household Impedimenta.

A delightfully decorative and useful  
note in my lady's morning room, or a  
cozy setting for the corner of her bed-  
room, is the sewing screen, a gracious  
little affair combining all the comforts  
of thread basket, pin cushion, needle case,  
work bag, cat-alike and table. One  
such screen, which graces the bedroom  
corner in the home of a busy little  
housewife, is fashioned of yellow denim  
and a delicately flowered yellow silk,  
and can be very easily carried out in  
any color by a pair of clever hands.  
The framework, which consists of two  
leaves 18 inches wide, is about three feet  
high and is covered from the outside and



fastened on the inside corners with fancy  
gilt nails. Each leaf is divided into  
three parts, the upper and lower given  
over to pockets made of the silk. A  
needle case covered with silk and a pin-  
cushion of yellow plush hang from the  
top of each leaf, respectively. Two flat  
pieces of pasteboard covered with the  
silk fall against the middle division of  
each leaf, one being held by ribbons to  
form a small shelf, the other standing  
by ribbons to two fancy-headed nails  
on either side of the screen above. Noth-  
ing so convenient was ever put into so  
small a space before, according to the  
owner of this housewife's joy. For it is  
a joy, she will tell you. Here is always  
the very thread and needle one wants at  
her very hand. Here is room for one's  
work of various kinds. The table, pin-  
cushion, scrap-basket and scissors, which  
hang at the side, are ever ready, and all  
practical things considered, this house-  
keeping attachment has the merit beside  
of being a thing of beauty.

#### Found in Amber.

In many museums may be seen in  
the most perfect state of preservation in  
amber fossilized remains of plants and  
animals. The science of Egypt in its  
highest development, did not succeed in  
discovering a method of embalming so  
perfect as the simple process taking  
place in nature. A tree exudes a gum-  
my, resinous matter in a liquid state.  
An insect accidentally lights in it and is  
caught. The exudation continues and en-  
velops it completely, preserving the  
most minute details of its structure. In  
the course of time the resin becomes a  
fossil and is known as amber. The  
history of fossil insects is largely indebt-  
ed to the fly in amber. And to the pre-  
serving properties of amber we owe,  
likewise, our knowledge of some of the  
more minute details of ancient plant  
structure.

The coasts of the Baltic are, and have  
been from the days of the Phœnician  
traders, the great source of the amber  
of commerce. It occurs in rolled frag-  
ments, in strata known to geologists as  
oligocene. These are tertiary rocks of  
date little more recent than those of the  
London basin, and equivalent to the  
younger tertiary series of the Isle of  
Wight. The fragments of fossil resin  
were washed down by the rivers from  
the pine forests of the district along  
with sediments and vegetable debris.  
In them are found most perfectly pre-  
served remains of the period, as well as  
of insect life.

Fragments of hair and feathers have  
been caught in the sticky resin and pre-  
served. Among others a woodpecker  
and squirrel have been recognized in the  
Baltic amber.—Gentleman's Magazine.

#### WOMAN'S WISDOM.

##### A Few Suggestive Thoughts.

It was not a mother's meeting, although  
mothers were doing a part of the talking,  
and not allowing the teacher and the fathers to  
monopolize all the conversation.  
The talk had drifted toward the subject of  
a natural tendency of many young people to-  
ward a rather wild life. Said one gentle-  
voiced mother: "It seems easy for our young  
people to be good men at home and to be  
ruined by good influences, but when they  
are away from home, among giddy young  
folks, then they are apt to be led astray, for  
they have not the moral strength for resistance  
which we older ones have."

Then another claimed that this tendency  
toward evil was probably often inherited,  
perhaps from ancestors more remote than  
father and mother, and that environments  
merely developed that which was latent in  
the youth's nature. And why may this not  
be true? We often hear these remarks: "John  
is like his father," or "son to protect the in-  
terest he has at stake? But, then, are there not  
a great many who have no father, husband,  
etc., to whom they may look for protection?"

"No Thaxian without Representation"  
but the cry raised by our beloved fore-  
fathers, and with which we are so often  
banned, they marched forward to  
fight—to fight and win. With the identical  
words inscribed on her banner, with the  
sword of the Constitution in her hand,  
woman is following in the footsteps of her  
progenitors, battling with bigotry—with the  
traitor within and the enemy without, but  
to conquer in the end. She has shown her-  
self competent and qualified to vote, she has  
expressed a desire to vote, and I say let her  
vote.

To woman may it be said:  
Duty be your guide;  
Do not fight with passion;  
Haste not to rest not conflicts past;  
God shall crown thy work at last.  
— E. F. J. Centerville, Ill.

do. So there are a great many things gen-  
tlemen are not expected to do. If the process  
of voting or attending political meetings is  
degraded to refined women, what is there in  
this consideration that is not equally appli-  
cable to refined gentlemen?

If our political atmosphere is of such a  
polluting, contaminating nature as to make  
the check of every polished gentleman to  
maim with shame while escorting his wife  
and daughter to the polls, then, indeed, is it  
time to propose the political condom, and  
"Whither are we drifting?"  
But give to his wife and daughter the  
right to go, and if it is a man he will go  
with them, and see to it that the process of  
voting is conducted under conditions and  
with environments which will make it  
decorous and untarnished and fit for the  
participation of any refined person.

So the emancipation of woman will act as a  
moral agency, instead of carrying with it  
demoralization.  
Again, although we deny her the right to  
vote, we tax her equally with man.  
Oh, well, you report, has she not a father,  
husband, brother, or son to protect the in-  
terest he has at stake? But, then, are there not  
a great many who have no father, husband,  
etc., to whom they may look for protection?"

"No Thaxian without Representation"  
but the cry raised by our beloved fore-  
fathers, and with which we are so often  
banned, they marched forward to  
fight—to fight and win. With the identical  
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— E. F. J. Centerville, Ill.

In Reply to Mrs. Mackey, of February  
Issue.

You cannot be too careful in managing  
those precious little ones intrusted to your  
keeping.

A great responsibility rests upon the par-  
ents—far greater than they may think—in  
the management of children.

Their success in after years depends in a  
great measure upon the careful training they  
receive in their childhood home.

Parents should work together for the good  
of their children. The educational founda-  
tion should be laid in the home, and that  
home should be made as pleasant as possible.

Home is a child's world, and if we  
would keep our children with us,  
A mother should not have so much to do  
that she cannot take time to help the little  
ones with their lessons or answer their num-  
erous questions. Better slight your housework  
occasionally than neglect the cultivation of  
your children's minds.

Much depends upon the mother, although  
the father should be, and no doubt is, as  
deeply interested in the welfare of his chil-  
dren as the mother; still, there is a closer sym-  
pathy existing between mother and children,  
on account of the mother being more con-  
stantly with them. She is the one who sees  
and hears all their troubles during the day;  
she kisses the pinched fingers to make them  
warm, brushes away the tears, speaks gentle  
and loving words that cause their troubles to  
vanish. A child needs and craves sympathy.  
It should be given freely if you would have  
kind and sympathetic children.

A child should not be punished on the im-  
pulse of the moment. Always take time for  
reflection; learn to control your temper, and  
then if it is absolutely necessary to inflict  
punishment, do so in a sensible manner.  
Treat your children with kindness, treat  
them as equals. There is no happiness in a  
home without love; raise your children in  
the sunlight of love and they will be sun-  
beams to you along the pathway of life.

"Suffer little ones to come,  
Forbid them not to come,  
And took them in his holy arms,  
And blessed them as he sighed.  
For he loved them much to find  
That in his own children  
Which seemed to him unkind."  
— Mrs. M. C. Nebraska.

**Our Schools—A Diphtheria Remedy.**  
Cookies—Literary Clubs.

We are glad that the subject of school,  
pupils, parents and teacher is being discussed  
in our paper. It is an important subject.

Parents should not neglect to note the  
progress their children are making. If  
they think it too slow, learn, if possible,  
where the fault lies. Perhaps you can by a  
few words help your child more than by  
the teacher, because you know his disposition  
better. You who are pleased, say so, and let  
the teacher know his work is appreciated.  
We frequently hear parents say their children  
need to be punished for something they have  
done at school; punish them, it is your duty  
to do so.

We have a remedy which has proven val-  
uable wherever we have known of its being  
used. It is called a diphtheria cure, but it is  
excellent for any throat trouble: Golden seal,  
one teaspoon; chloride of potash, one-third of  
a teaspoon; lobelia, one-third of a teaspoon;  
borax, one-half of a teaspoon. Add to one  
pint strong sage tea.

Use as a gargle and take one teaspoonful  
three times a day before meals. This dose is  
for a child of six years. Apply to the outside  
of the throat flat pork which has been  
rubbed with oil, turpentine, pepper and mas-  
tard. The wash is also good for sore mouth.  
When we get well we want something good  
to eat; so we will make, in the following way,  
some cookies: One cup sugar, one egg, one-  
half cup melted grease, one-half cup butter-  
milk, one-half teaspoon soda, spice to suit  
our taste and flour enough to form a stiff  
dough. Roll thin and bake to a light-brown  
in a hot oven. Warm the milk and sugar to-  
gether, stirring frequently, and then add the  
other ingredients. If fresh grease is used add  
one-half teaspoon salt.

Why is it that so many country places are  
without a literary society? Almost every  
school district could have one if an effort were  
made in that direction. A good plan is for  
one of the district officers, the S. S. Superin-  
tendent or school teacher, to announce, by a  
written notice or by personal invitation, that  
a meeting will be held at a stated time to  
organize a literary society. Organize, and, if  
possible, have a debate occasionally, but al-  
ways require of the members a song, recita-  
tion or something of a literary nature. You  
who have not tried it will be surprised at the  
amount of amusement you can get at such a  
gathering twice a month. If the membership  
is large divide the names, and only require  
each to contribute something at every second  
meeting.

Who, someone, send to The Farmhouse a  
list of easy questions to debate?—E. A. B.,  
Yoncalla, Ore.

#### Dry Fork Baptists.

We are proud of the good sense of  
Baptists which leads them to name their  
churches and their associations so gener-  
ally by local names as the Apostolic  
churches are named. Still, Dry Fork  
seems a little inappropriate to Baptists,  
though we are glad the association in  
Missouri called itself by that name.—  
Louisville Western Recorder.

#### FREE TO INVALID LADIES.

A lady who suffered for years with uterine troubles  
and nervous prostration, and who had been  
treated by all the best medical authorities, and  
who had been told that she would never be  
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PROPHIME COGOLIN, generally known in the district as Master Trefume, had no often related the story of Uncle Sambuc and his fortune that he had finally come to believe it himself. The simple truth of the matter was that Peter Sambuc, a seafaring man who had given his parents a good deal of trouble, had shipped as an ordinary seaman on a three-master one fine day in the year of grace 1848, and had never been seen or heard of since. These facts were too ridiculously simple for the worthy friends and relations of the vanished Peter; they could not understand how anyone could get out for America without reaching the continent and making his fortune; so the worthy people gradually evolved the idea that Uncle Sambuc had gone and done likewise, and would one day return rolling in riches—of course, to die in due time and leave his fortune to them.

So the years rolled by, and Uncle Sambuc's fortune grew bigger in the imagination of his people. The older relatives died, and Master Trefume became heir to his uncle. Now, it happened one day that Trefume met a sailor whose acquaintance he had made a year or so previously. This man had

not, he took to his heels as soon as he saw the Frenchman running. "What!" said Trefume to himself, in an indignant tone. "This man knows New York as well as I know London, and he won't help me! I'll see about that."

Away they went, the American and Trefume. In vain the former doubled this corner and that; his pursuer stalked him until, thoroughly exhausted, the American took refuge in a bar and awaited the arrival of his pursuer.

"So I have you at last!" exclaimed the Frenchman. "Why did you run away and give me all this trouble? Now you must!"

"Hush!" interrupted the American, turning pale in spite of the violent exercise. "Don't make a fuss," he continued, in excellent French; "that will be of no use. Come and sit down in this corner."

"Ah! that's better," thought Trefume. But he simply looked knowingly at the man and took a seat.

"Here!" he said, pointing to two of the passengers; "those are the men to help you. They know New York so well that they could find their way blindfolded anywhere in the city. Try them!"

Trefume looked at the men and thanked his compatriot heartily. He was delighted at the thought of meeting two people who were so well acquainted with New York. They were two shifty-looking Yankees, who had been left very severely alone on the voyage. He went toward the two passengers, who, after exchanging a word or two between themselves, walked away before he could reach them. Trefume walked after them, but they still avoided him and began conversing earnestly together. The fisherman hesitated; he thought they had something private on, and he did not wish to intrude. It never entered his head that they were avoiding him. He did not intend to lose his chance, so he continued to walk after them at a respectable distance. Two or three times, when he thought the moment opportune, he approached them but in vain and attempted to speak to them in his best French, but was met with a scowl and a growl which made him retire. He put it down to American—or English—manners, and with a sigh he withdrew for a few minutes.

The two Americans were evidently much perplexed at the strange conduct of their fellow-passenger; they were worried about it, too; so, finally, they spoke to the under-steward concerning the Trefumes because the envious one of the neighborhood, Uncle Sambuc, and his fortune—especially his fortune—were the chief topic of conversation for many a day among the inhabitants of the whole district. The Trefumes lived happy and contented, patiently awaiting the time when they would have their share of the millions amassed by Peter Sambuc.

A few months passed away. One morning, when he was least expecting it, he received a letter from New York. The letter bore the seal of the French Embassy. Trefume carried that precious letter about with him all day, without breaking the seal, in order to show it to his friends. Not till the evening, in the presence of his wife and children, his hands trembling with excitement, did he venture to open it. It was somewhat bulky—probably it contained bank-notes. The papers were carefully taken from the envelope and proved to be Uncle Sambuc's death certificate and a brief note from the Embassy.

"So he is dead?" replied his wife. "Of course he is," replied Trefume; "doesn't the Ambassador say so?"

There was silence. None of them had known the dead man, but they had thought so much about him that it seemed as though they had been on intimate terms with him, and they were able to grieve out a tear.

"The Ambassador doesn't say anything about the fortune," observed Trefume's better-half, wiping her eyes. "I suppose you want him to tell us all about it straight off before the man is fairly dead," replied Trefume, smiling.

thanked the under-steward, and dived into their cabin, from which they only emerged when the ship was actually alongside the quay. Poor Trefume looked for them in vain; they got off the steamer unobserved by him, and he was left to find his way about New York as best he could.

How he went through the rest of that day, where he lodged at night, he never knew. He began again on the following day, looking for the Embassy, asking the way in his provincial French, and being laughed at and treated with contempt as an impostor, until, sick at heart, and thoroughly discouraged, he sat down on a doorstep and began to cry. Uncle Sambuc might have journeyed to his native country to die, and thus have made things easier for his heir!

After a few minutes he plucked up courage and determined to try again. He had just reached the end of the street when he saw one of the Americans to whom the under-steward had referred him on the steamer. He had changed his clothes and cut off his beard, but Trefume was positive that it was the same man.

"Monsieur, monsieur!" he cried, running towards the man.

Whether the man heard the words or not, he took to his heels as soon as he saw the Frenchman running.

"What!" said Trefume to himself, in an indignant tone. "This man knows New York as well as I know London, and he won't help me! I'll see about that."

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For the leisure hour of readers, old and young. All are invited to contribute original puzzles and send solutions to this issue will appear in two months. An asterisk (\*) after a definition signifies that the word is obsolete. Address letters for this department: "Puzzle Editor," AMERICAN FARMER, 1729 New York Ave., Washington, D. C.

#### ENIGMATICS—NO. 22.

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